



DOCKET

07-AFC-8

DATE DEC 22 2008

RECD. DEC 22 2008

RESPONSES TO CURE DATA REQUESTS MOTION TO COMPEL

(DRs 37, 38, 51, 52, 56, 57, 58, 59, 64, AND 67)

APPLICATION FOR CERTIFICATION (07-AFC-8)

Carrizo Energy Solar Farm

Carrizo Energy, LLC



Submitted to:
California Energy Commission



Submitted by:
Carrizo Energy, LLC

With Support from:

URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108

December 2008



December 22, 2008

Mr. John Kessler
Project Manager
Attn: Docket No. 07-AFC-8
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512

Subject: Carrizo Energy Solar Farm (07-AFC-8)
Applicant's Responses to CURE Data Requests
Motion to Compel (DRs 37, 38, 51, 52, 56, 57, 58, 59, 64, and 67)
URS Project No. 27658060.01800

Dear Mr. Kessler:

On behalf of Ausra CA II, LLC (dba Carrizo Energy, LLC), URS Corporation Americas (URS) hereby submits the Applicant's Responses to CURE Data Requests – Motion to Compel (DRs 37, 38, 51, 52, 56, 57, 58, 59, 64, and 67) (Carrizo Energy Solar Farm 07-AFC-8).

I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to submit the Applicant's Responses to CURE Data Requests – Motion to Compel (DRs 37, 38, 51, 52, 56, 57, 58, 59, 64, and 67) on behalf of Carrizo Energy, LLC.

Sincerely,

URS CORPORATION

A handwritten signature in black ink, appearing to read "Angela Leiba", is positioned above the printed name and title.

Angela Leiba
Project Manager

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

Data Request Response Guide

Data Request	Page
Biological Resources	
BIO-37	BIO-1
BIO-38	BIO-4
BIO-51	BIO-5
BIO-52	BIO-7
BIO-56	BIO-9
BIO-57	BIO-10
BIO-58	BIO-11
BIO-59	BIO-12
BIO-64	BIO-13
BIO-67	BIO-14

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Increased Raptor Predation and Bird Collisions Associated With Project Structures

Data Request 37: Please provide a discussion of bird collisions, particularly migratory birds, with the proposed receiver structures and other structure on-site. Please discuss specifically how Project structures would pose a lesser threat to birds than other, similar man-made structures that have been extensively documented as sources of avian mortality.

Committee Response: The complexity and height of the various structures proposed for the project make it reasonable that Applicant analyze potential project-related collision risks to birds. The response should take into account the potential risk to migratory as well as birds known to inhabit the area and possible mitigation measures to reduce any risks from collision. In its Preliminary Staff Assessment (PSA) Staff noted, that the effects of the CESF type of solar collector on wildlife are currently unknown and that guy wires on the 56-foot tall receiver structures may pose a collision threat.⁹ However, we are not persuaded that CURE's reference to the 1986 study of the Solar One facility is relevant. That solar project was of a completely different technology and design from the proposed project and was located in a very different environmental setting. Thus, as to this Data Request, CURE's Motion is, in part, Granted.

Response:

Several studies on bird mortality from collisions with high-tension lines, buildings and windows, wind turbines, and vehicles are available. A brief summary of several studies that may be related to this Project are included below. While the tallest structure on the Project site will be 115 feet tall, this is one structure and is equivalent to a 3-story building. Fatalities associated with buildings are usually the result of collisions with tall multi-story buildings that are lighted at night and/or collisions with reflecting windows at residential houses. USFWS estimates that 98 to 976 million bird deaths per year in the U.S. are due to collisions with building windows. The 115 foot tall air cooled condenser will not have windows and will therefore avoid potential bird collisions typically associated with windows in multi-story buildings. Furthermore, unless maintenance work is being conducted, the air cooled condenser will not be lighted at night. The steam turbine generator will also not contain windows and will not be lighted at night. The only building that will contain windows is the low-rise administration building that is 35 feet high. This building will have some lighting at night to support maintenance activities. This lighting will be shielded and focused downward to reduce impacts to the night sky. The relatively low-rise stature of the onsite buildings and, with the exception of the administrative building, lack of windows and night lighting associated with traditional office towers will minimize any bird collisions from these structures.

In the Netherlands, where approximately 2,875 miles (4,600 km) of high-tension lines are present, Koops (1987) estimated that approximately 750,000 to 1 million birds are killed annually by collisions based on an extrapolation made from three other Netherlands studies. Estimates in all three studies were in the same order of magnitude. The latter study estimated (unadjusted for scavenging and searcher efficiency) 113 fatalities per km of high tension line in grasslands, 58 fatalities per km of high tension line in agricultural lands, and 489 fatalities per km of high tension

Carrizo Energy Solar Farm

Responses to CURE Data Requests – Motion to Compel

07-AFC-8

line near river crossings. The study used the mean estimate (adjusted for scavenging and searcher efficiency bias) of $750,000/2,875 = 261$ bird deaths/mile of high tension line. Extrapolating the mid-range of this estimate to the 500,000 miles (800,000 km) of bulk transmission lines in the United States would lead to a fatality estimate of approximately 130 million birds per year. Given the large, but unknown number of miles of power and other high tension lines in the U.S., and the lack of standardized data in the U.S., this estimate may be off by an order of magnitude or more in either direction (Erickson et al. 2005, Manville 2005).

Summary Table from Erickson et al. (2005):

Mortality Sources Compared—Erickson et al.

Table 2—Summary of predicted annual avian mortality.

Mortality source	Annual mortality estimate	Percent composition
Buildings ¹	550 million	58.2 percent
Power lines ²	130 million	13.7 percent
Cats ³	100 million	10.6 percent
Automobiles ⁴	80 million	8.5 percent
Pesticides ⁵	67 million	7.1 percent
Communications towers ⁶	4.5 million	0.5 percent
Wind turbines ⁷	28.5 thousand	<0.01 percent
Airplanes	25 thousand	<0.01 percent
Other sources (oil spills, oil seeps, fishing by-catch, etc.)	not calculated	not calculated

¹Mid-range of fatality estimates reported from Klem (1990), 1 – 10 bird fatalities per house, extrapolated to 100 million residences

²Based primarily on a study in the Netherlands (Koops 1987), extrapolated to 500,000 miles of bulk transmission line in U.S.

³One study in Wisconsin estimated 40 million (Coleman and Temple 1996), there are 60 million cats claimed as pets in the U.S.

⁴Based primarily on one study in England (Hudson 1965, Banks 1979) that estimated 15.1 fatalities/mile of road each year, no searcher efficiency or bias adjustments in that study, updated based on increase in vehicle registrations

⁵Conservative estimate using low range of empirical fatality rate (0.1 to 3.6 birds/acre), studies typically adjusted from searcher efficiency and scavenging

⁶Estimates from models derived by Manville and Evans (M. Manville, pers. comm.).

⁷Mid-range of per turbine and per MW estimates derived from empirical data collected at several wind projects (table 1).

The CESF Project site is not within an area that would concentrate migratory birds. Common local resident bird species would be most at risk of collision with the proposed structures. Large numbers of susceptible waterfowl species are absent from the immediate Project vicinity. Based on previous studies (e.g., McCrary et al 1986, Koops 1987), a conservative estimate of between 1 and 40 birds (all bird species) per year could be killed from collisions with buildings or other structures proposed on the Project site or the connection to the existing transmission line associated with the Project. Use of FireFly bird flight diverters (see photo), or similar devices that are used on transmission lines, may make the structures more visible and lessen the risk of bird collisions.

**Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8**



http://www.birdbusters.com/bird_flight_diverter.html

References:

Erickson, Wallace P., Gregory D. Johnson, and David P. Young Jr. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002, C.J. Ralph and T. D. Rich, Editors. U.S.D.A. Forest Service General Technical Report PSW-GTR-191, Pacific Southwest Research Station, Albany, CA: 1051-1064

Manville, A.M., II. 2005. Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science – next steps toward mitigation. Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002, C.J. Ralph and T. D. Rich, Editors. U.S.D.A. Forest Service General Technical Report PSW-GTR-191, Pacific Southwest Research Station, Albany, CA: 1051-1064

M.D. McCrary, R.L. McKernan, R.W. Schreiber, W.D. Wagner, and T.C. Sciarrotta. 1986. Avian Mortality at a Solar Energy power Plant. J. Field Ornithol. 57(2): 135-141.

Koops, F.B.J. 1987. Collision victims of high-tension lines in the Netherlands and effects of marking. KRMA Rep. 01282-MOB 86-3048. [Cited in Erickson et al. 2005 and Manville 2005].

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Increased Raptor Predation and Bird Collisions Associated With Project Structures

Data Request 38: Please provide any studies that would support the AFC's conclusion that Project receivers (and other Project structures) would not present a substantial collision hazard to birds.

Committee Response: As noted in the above discussion of Data Request 37, we deem the study cited by CURE to be inapplicable to CESF. Furthermore, CEQA does not require Applicant to prove a negative. Nevertheless, Applicant must make a reasonable literature search to determine if any bird collision studies exist that could help the Committee determine potential collision risks from the proposed project. Granted.

Response:

Please refer to the table included in Data Request Response 37, above (excerpted from Erickson et al [2005]). Based on estimates of breeding landbirds and mortality estimates, approximately 5-10 percent of the populations of breeding landbirds are killed each year from all human caused factors. Impacts on individual species may be higher or lower depending on their population levels (Erickson et. al. 2005).

Many studies indicate that species with high wing loading and low aspect ratios run a high risk of colliding with power lines. These birds are characterized by rapid flight, and the combination of heavy body and small wings restricts swift reactions to unexpected obstacles. When the number of reported collision victims is considered relative to the abundance and population size of the species concerned, mortality of Galliformes, Gruiformes, Pelecaniformes and Ciconiiformes species seem to be documented in disproportionately high numbers. None of these high risk bird groups are common in the immediate Project vicinity (Bevanger 1998).

In contrast, species historically affected by electrocution particularly seem to involve Ciconiiformes, Falconiformes, Strigiformes and Passeriformes. Modern designs of transmission line towers have minimized electrocution of the larger bird species. Mortality due to electrocution can be minimized through appropriate design (Bevanger 1998).

The CESF Project site is not within an area that would concentrate migratory birds. Common local resident bird species would be most at risk of collision with the proposed structures. Susceptible waterfowl species are absent from the Project vicinity. Based on previous studies (e.g., McCrary et al. 1986, Koops 1987), a conservative estimate of between 1 and 40 birds (all bird species) per year could be killed from collisions with buildings or other structures proposed on the Project site or the connection to the existing transmission line associated with the Project. Use of FireFly bird flight diverters, or similar devices that are used on transmission lines, may make the structures more visible and lessen the risk of bird collisions.

References:

Bevanger Kjetil. 1998. Biological and conservation aspects of bird mortality caused by electricity power lines: a review. Biological Conservation. Volume 86, Issue 1, October 1998, Pages 67-76.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to the California Condor

Data Request 51: Since endangered California condor live in the Carrizo Plain and the USFWS Recovery Plan states that the Carrizo Plain provides foraging for the condor, please provide an analysis of the Project's impacts on the foraging habitat and restoration of the California condor population.

Committee Response: The Applicant's analysis to date indicates that the endangered California condor is not currently active in the vicinity of the project. However, CURE argues that the condor can travel as much as 150 miles foraging for food, which could potentially place condors at the project site. Staff also notes in its PSA (p. 4.2-11) "the possibility that condors may be encouraged to return to the area." Applicant argues that the cattle operator at the site now removes dead cattle, thereby limiting attractions for foraging condors. However, local residents have commented that leaving dead cattle on other adjacent properties is a more common practice. The Motion on this request is Granted.

Response:

Radio telemetry data from the USFWS Hopper Mountain National Wildlife Refuge (2007-2008) indicates that the condor do not use the Project area. While it is true that condor can travel up to 150 miles to forage, the radio telemetry study shows the condors flying in a north-south direction along the ridgelines and foothills of the Caliente Mountain Range west of the Project site. Additionally, GPS records from 1910 to 1987 show that the condor were historically associated with the foothills and more topographically diverse areas around the valley. The nearest condor was recorded in 1983 more than 5 sections away from the CESF Project site (USFWS 2008). There are no records of the condors flying east over California Valley or the Carrizo Plain. Please see the Figure provided below. Based on this information, no impacts to condor foraging habitat are anticipated as a result of the Project.

Potential reintroduction of California condor to the area is speculative and cannot be used in the assessment of the Project. The impact assessment cannot be based on speculative actions that are not documented in any existing, approved planning document that has been subject to public review and comment. California Valley is dominated by privately owned lands and such a wildlife agency management action would need to be assessed under CEQA prior to implementation. The Applicant is unaware of any such analysis to date. Therefore, reintroduction of condors into this area is speculative, which makes it very difficult to assess the potential impact of this Project on this species. At this time, the data shows the species do not use this area and are therefore not impacted.

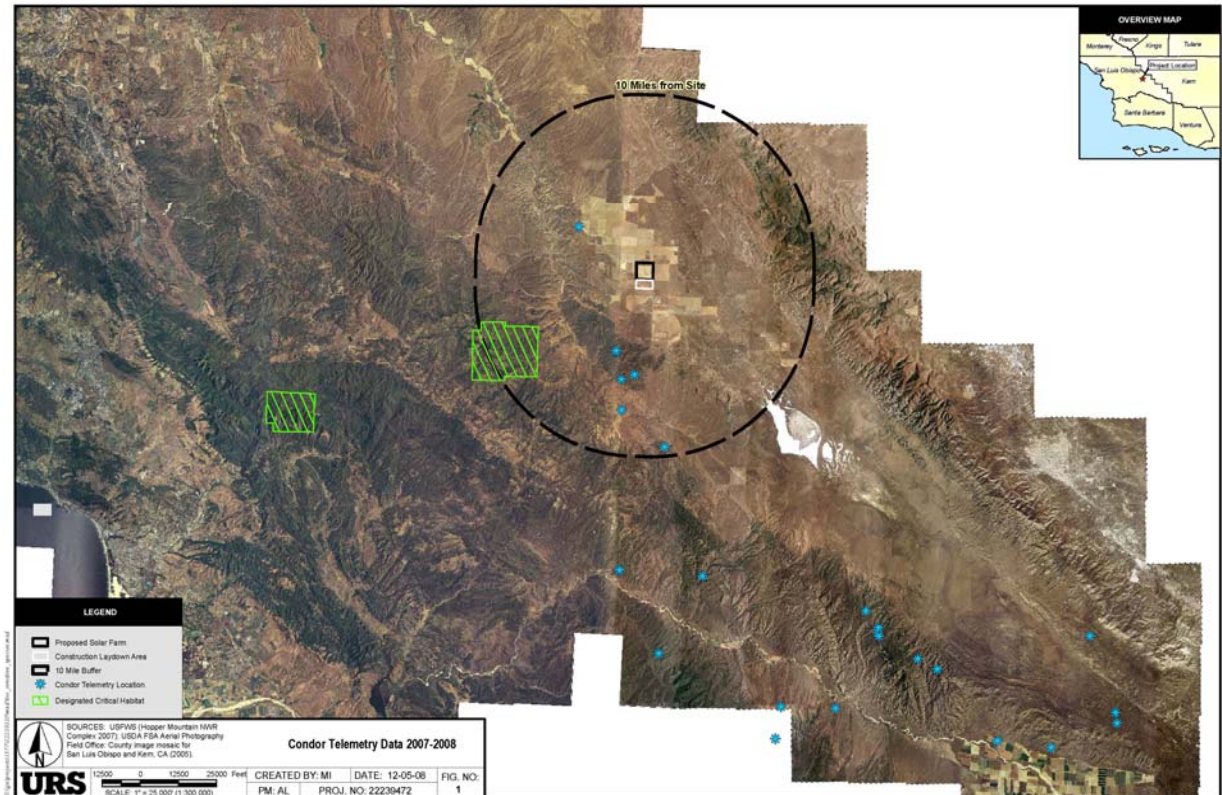
Based upon a potential reintroduction to this area, the Project would remove a section of land that is currently farmed for part of the year followed by cattle grazing for part of the year. These uses are not optimal for species like the condor because cattle are not kept on the property at all times, thereby reducing the potential year-round availability of dead cattle. Current management practices minimize the availability of food resources suitable for condors. Because of this limited use for cattle, the property would in turn provide limited value to the condor if it were in the area. The Project site is small compared to the flight range of an individual condor. Therefore, the loss of this land would have less than significant impacts on the condor.

Carrizo Energy Solar Farm

Responses to CURE Data Requests – Motion to Compel

07-AFC-8

These marginal impacts would be compensated for by the set aside of adjacent sections for continued agricultural uses. The Applicant proposes to compensate for the removal of this section of land from farming and grazing uses with agricultural easements on surrounding lands so that land is preserved for use by these species and others and cannot be developed for non-agricultural land uses. The conserved agricultural lands could be used by condor if food resources were present.



Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to the California Condor

Data Request 52: Please provide an analysis of cumulative impacts to the endangered California condor and its foraging habitat from all past, present and future projects in the Carrizo Plain, including the neighboring OptiSolar Topaz Solar Farm and the Sun Power project.

Committee Response: Two additional projects are proposed in the vicinity of the one square mile CESF, including the proposed Optisolar Topaz project, which may occupy 8.5 square miles north and west of the project site, and the proposed 4.5-square mile Sun Power project located six miles east of the project site. The Committee has a duty under CEQA to analyze the potentially significant cumulative impacts of at least 14 square miles of project development in the Carrizo Plain environment. The Motion on this request is Granted.

Response:

As discussed in the response to Data Request 51, GPS data from 1910-1987, and radio-telemetry studies completed by USFWS in 2007 and 2008, illustrate that condor do not use the Project area. Therefore, no cumulative impacts are anticipated to California condor as a result of the CESF Project or the additional proposed projects in the Project vicinity.

Furthermore, simply because a project is proposed for an area does not mean that it will obtain all of the necessary permits. Therefore, it is speculative to evaluate all three projects as proposed as if they would be developed exactly as proposed for the amount of land that is proposed. Nonetheless, given what is known about the location of the Topaz Solar Farm, it will be located in grasslands with cattle grazing and actively farmed land with some cattle grazing. Removal of the combined acreages would reduce the amount of potential foraging habitat available to the condor. The Application for the Conditional Use Permit for the Topaz Solar Farm acknowledges a potentially significant impact to large game species of Tule Elk and Pronghorn, thus the combined impact of all three projects would reduce the area available for cattle and large game. This reduction could impact the availability of food sources for scavenger species like the condor on the sections slated for development by all three projects. Given the condor does not currently use this area, it is speculative to anticipate the level of use of this area and its importance to the recovery of the condor. While condor are known to travel up to 150 miles from their roosting sites in a day, it is speculative to analyze the impacts on the overall range of condor that may be reintroduced to this area from removal of open space within the vicinity of the Project site. Because the condor does not currently use this site, the Applicant must speculate as to the importance of the development of these combined sections to the condor as opposed to sections in the hills that condor are known to forage over, or other areas within the plain with greater ability to support year round cattle grazing. Under one metric, any development of any currently undeveloped land would remove potential foraging habitat for the condor.

Because there is no current use of the Project site by condor and there is no data on future use, the Applicant would be speculating on the potential impact to the species. Regardless of the impact of the combined projects, the Applicant's contribution to this impact would be minimal (one tenth of the proposed Topaz Solar Farm). As stated above, the section proposed for the Project site is typically planted and then grazed. The cattle are not kept on the property year-round and

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

therefore provide seasonally limited opportunities for scavenger species like the condor. Furthermore, the Applicant is proposing to provide easements on surrounding property so that land will be available to the condor for foraging use if it is introduced to the Project area. This mitigation will compensate for any minimal contribution of the Carrizo Project to the cumulative impact of all three projects.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to Special Status Species

Data Request 56: Please explain how the Applicant has addressed the Project's impacts to the bald eagle.

Committee Response: While we acknowledge Applicant's frustration that its field studies to date are not being accepted as adequate, several parties expressed concern that special status species have been observed on or near the project site. CURE's Motion alleges examples tying special status species to the site or to nearby areas.¹⁰ A local resident commented on seeing several of the species on or near the site (11/17/08 RT 115, see also 78:16-18.) and a Commission staff biologist expressed the need for more information about special status species on or near the project site. (Id. RT 77.) Specifically, Staff requests additional information on the bald eagle, ferruginous hawk, golden eagle, loggerhead shrike, and vesper sparrow. (Id.)

We believe that Applicant's efforts to date still leave gaps in the database the Committee requires in order to address potential project impacts to the avian species of special status noted above by the Staff. This is particularly true regarding potential cumulative impacts to these birds. The fact that the birds were not observed on the project site at the time Applicant's biologists conducted their field surveys does not foreclose the need to evaluate the project's potential for direct, indirect and cumulative impacts on the species. Accordingly, we GRANT Data Requests 56-59 and 64.

Response:

Bald eagles have been observed in the Project area based on reports from residents, as well as the Morro Coast Audubon Society flyway archives (<http://morrocoastaudubon.org/flyway.htm>). The Morro Coast Audubon reported individual bald eagles using power lines near the Carissa Plains Elementary School and the old Arco Solar facility near the Project site. Bald eagles are likely using the Project vicinity as a stopover rest area, as no pairs have been reported here and the habitat is not suitable for nesting or foraging. The majority of bald eagle sightings in San Luis Obispo County are of pairs at known nesting sites located near lakes (Santa Margarita Lake, Lake Nacimiento, Lopez Lake, Morro Bay, and Whale Rock Reservoir). Although less applicable to bald eagle, the AFC and 2008 Biological Survey Report identified the general loss of raptor foraging habitat at the Project site as significant and proposed mitigation to reduce impacts to less than significant.

Raptors as a general guild were included in the AFC and 2008 Biological Survey Report and included ferruginous hawk, red-tailed hawk, loggerhead shrike, golden eagle, turkey vulture, and any other bird of prey or large scavenging bird. Purchase and establishment of an agricultural easement of lands adjacent to the Project site has been proposed as mitigation to reduce the impacts to raptor foraging habitat to a less than significant level.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to Special Status Species

Data Request 57: Please explain how the Applicant has addressed the Project's impacts to the ferruginous hawk.

Committee Response: See Committee Response to Data Request 56, above.

Response:

Ferruginous hawk may use the Project vicinity as foraging habitat, although nesting habitat is not present. This species was also included in the AFC assessment and the 2008 Biological Surveys Report as part of the overall foraging guild that defines raptor species. The AFC and 2008 Biological Surveys Report identified the loss of raptor foraging habitat at the Project site as significant and proposed mitigation to reduce this impact to less than significant.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to Special Status Species

Data Request 58: Please explain how the Applicant has addressed the Project's impacts to the golden eagle.

Committee Response: See Committee Response to Data Request 56, above.

Response:

Impacts to golden eagle were discussed in the 2008 biological surveys report. Golden eagle has been observed on Project site in December 2008 and in the Project vicinity in Spring 2007 and 2008. This species likely forages in California Valley and the vicinity of the Project site. The AFC and the 2008 Biological Surveys Report identified the loss of raptor foraging habitat as a significant impact. Mitigation has been proposed and would mitigate the impacts to raptors as a guild to a less than significant level.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to Special Status Species

Data Request 59: Please explain how the Applicant has addressed the Project's impacts to the loggerhead shrike.

Committee Response: See Committee Response to Data Request 56, above.

Response:

Although this species was not detected onsite, there is potential for this species to use the Project vicinity and the site as foraging habitat. This species was sighted several miles from the Project site south of Highway 46, along Bitterroot Road and along Highway 58 in the foothills east of the site. While loggerhead shrike is a passerine species, its prey and foraging behavior is similar to that of burrowing owl and American kestrel and as such this species can be included as part of the overall raptor guild. The AFC and 2008 Biological Surveys Report identified the loss of raptor foraging habitat at the Project site as significant to all raptor species and proposed mitigation to reduce this impact to a less than significant level.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Impacts to Special Status Species

Data Request 64: Please explain how the Applicant has addressed the Project's impacts to the Oregon vesper sparrow.

Committee Response: See Committee Response to Data Request 56, above.

Response:

The Applicant's consultants did not observe vesper sparrows or the subspecies Oregon vesper sparrow on the Project site. While there is potential for this species to use the Project vicinity and the site as winter foraging habitat, this species has not been detected onsite. Impacts to this species are expected to be less than significant given its level of abundance elsewhere as a wintering species and the extensive availability of potential habitat in the Project vicinity and region (e.g., San Joaquin Valley and Carrizo National Monument). If present, this subspecies would benefit from the proposed biological mitigation.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8

TECHNICAL AREA: BIOLOGICAL RESOURCES

Background: Bird Mortality

Data Request 67: Please provide monitoring data from similar solar facilities.

Committee Response: It is clear to us that study results and bird burn incidents from the Solar One facility are inapplicable to CESF. Nevertheless, Applicant should provide any data reasonably available to it concerning heat-related risks to birds from solar facilities which are actually similar to the proposed project. The response must also include estimates of elevated temperatures on surfaces at the proposed facility to which birds could reasonably be exposed. With these modifications Data Request 67 is GRANTED.

Response:

The study that CURE referenced shows Solar One's configuration, which is a set of mirrors in a circle around a single tower. All of the sun and resulting high heat is concentrated onto a single tower, and the heat sensing material is exposed. If a bird lands on the pipes or flies through the solar field, it will get burned. Ausra's technology is completely different from other solar technologies, because the temperatures of the Ausra solar field are not hot enough to burn a bird's feathers if it flies through the solar field, and the heat transporting material is insulated.

In Ausra's design there are rows of mirrors that direct sunlight up to several individual collectors; there is not one collector for all the mirrors. It is a low-temperature solar technology; not a high-temperature solar technology. The steam temperature inside the pipes is 300 degrees Celsius (568 degrees Fahrenheit), and the receivers wrap around the pipes and are insulated. The top of the collector hood is separated from the insulated pipes that run underneath and hold the steam, so the area where birds could perch is not hot or in direct contact with the steam pipes. The collector hood, where birds could perch, has been measured at 60 degrees C (140 degrees F).

Because of this difference in how the heat is concentrated and because the pipes and receivers are insulated, Ausra has not experienced any kind of thermal injury to birds at the installation in Australia. Also, because the focal point is very specific from all the mirrors on the pipes, if a bird flies underneath the receivers they are not at the exact focal point, so they are not at risk of getting burned.

This is the extent of studies or other information available, as Ausra's technology is new. Based on the data from the Australia installation, no significant impacts to birds are anticipated as a result of the heat from the solar field. A photo from Ausra's Australia installation of a bird standing on the top of the shielded collectors is provided below.

Carrizo Energy Solar Farm
Responses to CURE Data Requests – Motion to Compel
07-AFC-8





BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
FOR THE *CARRIZO ENERGY*
SOLAR FARM PROJECT

Docket No. 07-AFC-8

PROOF OF SERVICE
(Revised 11/25/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-8
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Perry H. Fontana, QEP
Vice President-Projects
Ausra, Inc.
2585 East Bayshore Road
Palo Alto, California 94303
perry@ausra.com

Kristen E. Walker, J.D.
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, California 92108
kristen_e_walker@urscorp.com

COUNSEL FOR APPLICANT

Jane E. Luckhardt
DOWNEY BRAND
621 Capitol Mall, 18th Floor
Sacramento, CA 95814
jluckhardt@downeybrand.com

APPLICANT CONSULTANT

Angela Leiba, GISP
Senior Project Manager
GIS Manager/Visual Resource
Specialist
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
angela_leiba@urscorp.com

INTERESTED AGENCIES

California ISO
e-recipient@caiso.com

INTERVENORS

California Unions for Reliable Energy
(CURE)
c/o Tanya Gulesserian
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com

John Burch
Traditional Council Lead
Salinan Tribe
8315 Morro Road, #202
Atascadero, California 93422
salinantribe@aol.com

* **Environmental Center of
San Luis Obispo (ECOSLO)**
c/o Babak Naficy
P.O. Box 13728
San Luis Obispo, California 93406

ENERGY COMMISSION

JACKALYNE PFANNENSTIEL
Chairman and Presiding Member
jpfannen@energy.state.ca.us

JEFFREY D. BYRON
Commissioner and Associate Member
jbyron@energy.state.ca.us

Gary Fay
Hearing Officer
Gfay@energy.state.ca.us

John Kessler
Project Manager
jkessler@energy.state.ca.us

Caryn Holmes
Staff Counsel
cholmes@energy.state.ca.us

Michael Doughton
Staff Counsel
mdoughto@energy.state.ca.us

Elena Miller
Public Adviser
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Kristen E. Walker, declare that on December 22, 2008, I deposited copies of the attached Applicant's Responses to CURE Data Requests – Motion to Compel (DRs 37, 38, 51, 52, 56, 57, 58, 59, 64, and 67) in the United States mail with first-class postage thereon fully prepaid (FedEx) and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

